

POPULAR NATURAL HISTORY¹

WE have to congratulate the publishers of this fine volume on its appearance, for, on a careful perusal, it strikes us as very eminently fitted to supply a known public want. On one or two previous occasions the same firm have published large and well-illustrated works on natural history, the descriptive portions of which were, to say the least possible of them, not in any way up to the science of the day; but we have lately gladly witnessed an infinitely more careful editing of such works on natural history as have been published by Cassell and Co., and the present work, so far as its descriptive portion is concerned, can boast of being written by men so well known as Duncan, Dallas, and Murie, while the illustrations.

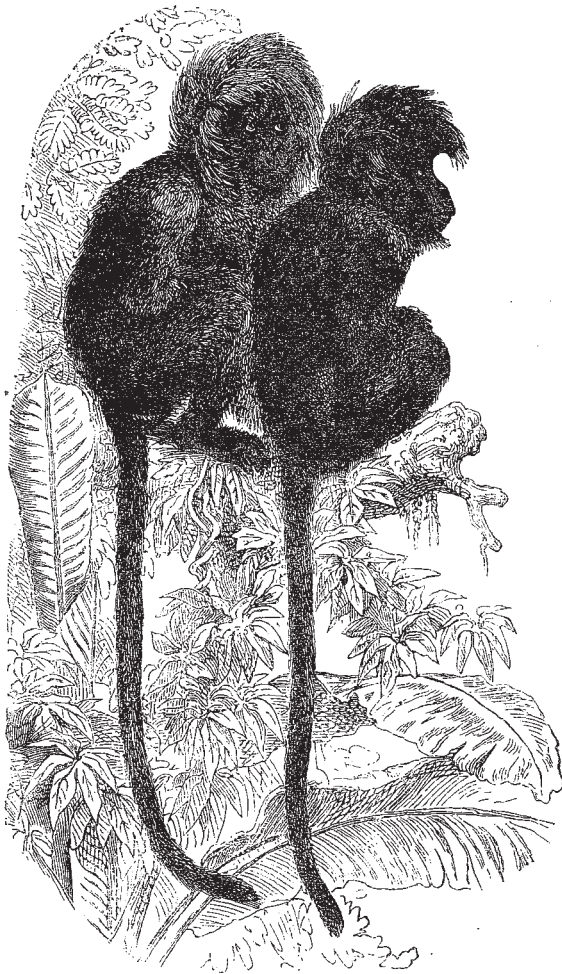


FIG. 1.—The Negro Monkey (*Semnopithecus maurus*).

many of which are very beautiful, and the general style of the get-up of the volume may well be left to tell their own tale.

The work aims at being an encyclopædia of the Natural History of the Animal Kingdom, and this, which forms its first volume, contains an account of the apes and monkeys, by the Editor; of the lemurs, by Dr. Murie, and of the bats and insect-eating mammals, by Mr. Dallas. May we, in the interest of the success of the work, suggest, that in order to complete the publication of such a work, within a

¹ "Cassell's Natural History," edited by P. Martin Duncan, M.B. (Lond.), F.R.S. Vol. i. Illustrated. (Cassell, Petter, and Galpin, London, Paris, and New York.)

reasonable time, there ought to be different portions of it simultaneously published. Thus there would be nothing to hinder the volumes on fishes being published alongside of those of the mammals, and it would be decidedly well to publish those volumes that will treat of the sponges and corals long before this portion of the animal kingdom would in the ordinary course be reached; but we venture this only as a suggestion.

The Editor tells us that the volume before us is meant to explain the many interesting facts of the natural history of animals, and that every endeavour has been made to unite zoology with comparative anatomy; the aim is high and the idea is a good one, but the authors sometimes fail to come up to the standard they hold before them. It is perhaps not to be wondered at, for do not the very words of our English language seem to fight against the perfect accomplishment of such aims. *Vertebra*, says Dr. Duncan, is a Latin word, which means "a turning joint in the body," or, "a back bone." What idea will the English youth take away of this Latin word?

We regret a little to see the attempt to give each animal what we suppose we must call an English name, and we are tempted to ask, Which is it easier to say, *Troglodytes calvus* or *Nsiehigomboue*? The former is the scientific name of a little-known ape; the latter is the name we are to make believe, as the young folk say, is English. It would have been better if both names had been equally conspicuous, then we could have taken our choice, and we can see no good reason for burying the scientific name in a foot-note.

As specimens of the style and illustrations, we have selected the following:—"The Negro Monkey (*Semnopithecus maurus*) (Fig. 1) is of an intensely black colour, except underneath, and at the root of the tail, where there is a grey tint. The paws are long, delicate, and silky, and become slightly grey on the head and back with old age. Like most black things it leads a troubled life, being chased and hunted, not, however, in the Javanese forests, and sometimes fifty or more individuals associate together. The Negro Monkeys make rude nests on trees, and are extremely timid, making off with great haste if they are disturbed. A long series of generations have been chased and killed by the natives of Java, and therefore the present Negro Monkeys are exceedingly shy, and bolt from the face of man at once. And yet, although thus timid and anxious to get out of the way, they have the reputation of being dangerous, and really unwittingly they may be so. On the approach of men they utter loud screams, and scamper off amongst the trees, helter-skelter. Now in doing this they break dead branches off, and sometimes a large fruit or nut comes tumbling down some score or two of feet. These are supposed to be thrown by the monkeys, but such is not the case. Having this bad character, the 'Negroes' are cudgelled with sticks, and killed in numbers very cruelly. Their pretty fur is much prized, and the chiefs of the country arrange the hunting parties, treating the monkeys really as beasts of the field. The skin is prepared by a simple process which the natives have learned from Europeans, and they conduct it with great skill. It affords a fur of a jet-black colour, covered with long silky hairs, which is used by the natives and Europeans there in ornamenting riding saddlery and in military decoration.

"When young they are of a brown or reddish tint, and thin grey tints appear preceding the intense black; they then eat buds and shoots and tender leaves, but in adult age they are fruit-consumers. When in captivity they are sullen and morose, and they will remain sulky for many months. This the natives know, and therefore they never try to tame them or to have them in their houses."

Another pretty illustration taken from the *Proceedings* of the London Zoological Society, is that of the Red-bellied Monkey (*Cercopithecus erythrogaster*), which is described as follows:—

"When living at the Zoological Gardens in the Regent's

Park, this pretty monkey, with a red chest and belly, and slim tail, was very timid, but it liked to be petted by the keeper, being somewhat distrustful of its more romping companions. It would take food out of his hand, and seemed pleased, and generally played with his fingers without attempting to bite. The canine teeth were very moderately grown (Fig. 2).

"This monkey inhabits Western Africa, and is at once known by the red belly and chest, the white beard and whiskers, and the black band across the forehead. It has, moreover, a yellow crown."

As a last illustration we select that of a most remarkable animal, the West African River Shrew (*Potamogale velox*, Fig. 3).

"This was originally described by its discoverer, M. du Chaillu, as a carnivore, under the name of *Cynogale velox*, but as its characters were very doubtful, the name *Potamogale* was suggested for it in case of its proving to belong to a distinct genus. The late Dr. Gray described it as a rodent under the name of *Mythomis*. Some years later Prof. Allman and Prof. Barboza du Bocage procured perfect specimens, and proved the animal to belong to the



FIG. 2.—Red-bellied Monkey (*Cercopithecus erythrogaster*).

insectivora, the latter naturalist describing it under the new name of *Bayonia velox*. Thus within a few years it received no less than three different names.

When the insectivorous nature of Du Chaillu's River Shrew was ascertained, it was found to be most nearly allied to the Centetidæ or Tanrecs, with special affinities to the West Indian Solenodens. It is, however, generally regarded as constituting a distinct family, characterised, among other things, by the less cylindrical skull, the absence of clavicles, the union of the two bones of the shank towards the extremity, the presence of anal glands, and the compressed form of the tail. The teeth, as in the true Tanrecs, are forty in number, but the molars differ considerably in form, as will be seen from the annexed figures.

This little beast, which has given rise to so much discussion among zoologists, and received so many names, is only a little larger than our common stoat, measuring about nine inches in length, exclusive of the powerful tail, which is of about the same length. In its appearance it very much reminds one of a miniature otter, from which, however, it differs considerably in the form of the head, which terminates in a broad flattened muzzle, having its sides furnished with a most luxuriant crop of stiff bristle-like whiskers. The hair of the upper part of the body and limbs is brown and soft, although rather coarse, and that of the lower surface yellowish; and the coat consists of two kinds of hairs, namely, an inner coat of very fine short silky hairs, through which longer hairs of a very

peculiar structure project. These long hairs are very thin at the bulb, and increase very gradually in thickness for about one-third of their length, when they suddenly contract a little, and then expand into a flat lance-shaped blade, which terminates in a very fine point. This coarser part covers the whole body, the thick root of the tail, and the upper part of the limbs; the rest of the tail, the under side of the muzzle, and the upper surface of the feet are clothed with short, close hairs. The ears are of moderate size, the eyes very small, and the toes on all the feet, five in number, are armed with small sharp claws, and without webs, but the second and third toes on the hind feet are united as far as the end of the first phalanx.

The most remarkable peculiarity of the animal is its tail, which presents a most unusual development for an insectivorous mammal. Prof. Allman says:—"It is so thick at its base that the trunk seems uninterruptedly continued into it; but it soon becomes laterally compressed, and then grows gradually thinner and narrower towards the tip. . . . Its lower edge is rounded, and its upper is continued into a membranous crest about one-eighth of an inch in height, and clothed with the same short, stiff, appressed hairs" as the rest of the tail.

This great development of the tail might of itself convince us that this organ is of great service to its owner, and such, from the account of the habits of the animal



FIG. 3.—West African River Shrew (*Potamogale velox*).

given by its discoverer, is evidently the case. M. du Chaillu says:—"This extraordinary animal (Fig. 3) is found in the mountains of the interior, or in the hilly country explored by me north and south of the equator. It is found along the water-courses of limpid and clear streams, where fish are abundant. It hides under rocks along these streams, lying in wait for fish. It swims through the water with a rapidity which astonished me; before the fish has time to move it is caught. On account of the rapidity of its movements I have given it the specific name of *Velox*. The animal returns to land with its prey almost as rapidly as it started from its place of conceal-

ment. The great motive power of the animal in the water seems to be in its tail."

So far as we have been able to read over this volume, we have found that great pains have been taken to record all the novel facts known about the animals here treated of. We perceive an account of the nest-building power of that most extraordinary Madagascar lemur, the Aye-Aye (*Cheiromys madagascarensis*) and the strange instances of mimicry about the bats, first noticed by Dr. Dobson, is to be found also noticed.

An index to each volume would be a very desirable addition.

NITRIFICATION

THE origin of salpêtre is a subject which has vexed the minds of several generations of chemists. Nitrate of potassium, or salpêtre, is found in nature as a white crust, appearing on certain rocks, old walls, and even upon the surface of the soil; from this mode of occurrence the name "salpêtre" is doubtless derived. The largest natural source of salpêtre is afforded by certain soils in India. Soil having a white film of salt on the surface is collected from the neighbourhood of house-

drains and stables; the soil is washed with water, and the nitre crystallised from the solution. With this Indian salpêtre England has been, till quite recently, almost exclusively supplied. The countries of Continental Europe, not having access to so considerable a natural source of nitre, have been obliged from early times to produce nitre for themselves. At first the earthen floors of cottages and stables were collected, washed, and nitrate of potassium obtained by treatment with wood-ashes and crystallisation; but the inconvenience of collecting such material, and its general poverty in nitre, soon led to attempts